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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Enzo Ingriselli et al

Serial No.: 10/713,799

Filed: November 13, 2003

Examiner: Melissa Thompson

Art Unit: 1745

Docket No.: C-3145

Title: Compact Reactant Gas Plumbing
Serving Dual Identical Fuel
Cell Stacks

DECLARATION UNDER 37 CFR 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Robin Jay Guthrie declare that:

1. I reside at 7 Lexington Road, East Hartford, CT.
2. I have a B.S. degree in Mechanical Engineering and an M.S. in Management, and have been working in the field of fuel cells and related arts for over 32 years, and am currently engaged in that field on behalf of UTC Power Corporation, South Windsor, CT.
3. I have reviewed and familiarized myself with the above-identified subject application and relevant portions of Sugita et al U.S. patent No. 6,613,470 (Sugita).
4. The disclosure of reactant gas inlet/outlet manifolds in the subject application is in a configuration with the stacks arranged fuel-side to fuel-side, and therefore the invention applied to stacks so arranged are fuel inlet/outlet manifolds. However, the stacks could as well be arranged with the air manifold sides adjacent. This would be evident to one skilled in the fuel cell and related arts.

5. In view of page 5, lines 5-7 of the subject specification, one skilled in the fuel cell and related arts would easily adapt the disclosed inlet/outlet manifolds to conduct air or other oxidizing reactants in an air-side-to-air-side configuration. One skilled in the fuel cell and related arts would also know that the disclosed and claimed inlet/outlet manifolds can conduct almost any gas without any special modification.

6. The specification of the subject application does not allege, nor would one skilled in the art of fuel cells expect, that fuel and oxidant would flow in the same inlet/outlet manifolds disclosed and claimed therein.

7. In the configuration disclosed in the subject application, fuel is handled by the inlet/outlet manifolds and oxidant is not: oxidant is handled some other way. This would be evident to those skilled in the fuel cell and related arts. One skilled in the fuel cell and related arts would understand how oxidant would be administered, such as flowing from the bottom through a portion of all cells, through the turn manifold 20 (Fig. 1, page 3 of the subject application), and then downward through the remaining portion of all cells. This is a configuration well known in the art.

8. From the facts of paragraphs 4-7 above, it is evident that the specification enables one skilled in the fuel cell and related arts to conduct reactant gas, whether it be fuel or oxidant, by means of the disclosed inlet/outlet manifolds, when the stacks are arranged with such reactant gas sides adjacent.

9. Sugita discloses in Fig. 5 and at column 5, lines 18-27 (5:18-27) that the fuel flow fields have folded grooves within which turnaround occurs. There is no turn manifold in Sugita as required at lines 4 and 5 of claim 1.

10. Sugita discloses in Fig. 13 and 6:31-39, 7:11-18, and 8:21-22 that the fuel inlets 122a of stacks 12, 14 are adjacent, but the fuel outlets 122b are at opposite ends, remote from each other. The fuel supply plumbing and fuel exhaust plumbing therefore cannot connect to fuel inlets and fuel outlets on opposite faces of the same inlet/outlet manifold as called for in lines 9-15 of claim 1.

11. Sugita does not disclose an inlet/outlet manifold which is connectable to reactant gas supply plumbing AND to reactant gas exhaust, as called for in lines 9-15 of claim 1.

12. Sugita does not disclose a pair of seal plates to close off opposite sides of identical inlet/outlet manifolds on the respective stacks, as called for in lines 16-18 of claim 1.

13. In Sugita, items 24 and 26 are end plates shown at mid left of Fig. 2, left of Fig. 24, left of Fig. 10, left of Fig. 12, left (21) and right (26) of Figs. 15 and 16, left of Fig. 17, and described at 3:60; 6:26, 31, 46; 7:8, 11, 14, 20, 23, 33, 47, 50; and 8:50 through 10:11.

14. The bracket 190 in Sugita covers the fuel inlets (8:56-65). Therefore, the elements "behind the brackets 90" are "the fuel gas/discharge passage 138b which makes communication for the fuel gas inlet 122a...." (7:12-14). There is no turn manifold behind bracket 190.

15. Sugita's "brackets (204, 202)", seen in Figs. 1 and 16, cannot "close off" reactant flow, nor seal any manifolds. At 9:6-19, oxygen flows from tube 206 (Fig. 16) through brackets 204, 206 to oxygen gas inlets 120a (Fig. 10), and fuel discharge passes from fuel outlets 122b through brackets 204, 206 to fuel discharge tube 210 (Fig. 16).

16. All statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Robin Jay Guthrie
Robin Jay Guthrie

April 20, 2007
Date